

**STUDI GEOLOGI DAN PERHITUNGAN CADANGAN HIDROKARBON
DENGAN PEMODELAN RESERVOIR PADA ZONA Z-28, FORMASI
TALANG AKAR, LAPANGAN “JE”, CEKUNGAN JAWA BARAT UTARA**

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SARI

Lapangan JE secara administratif terletak di sekitar desa Sukra, Kecamatan Sukra, Kabupaten Indramayu Provinsi Jawa Barat dengan koordinat $6^{\circ}15'7.071''$ LS - $6^{\circ}20'21.129''$ LS dan $107^{\circ}54'10.663''$ BT - $107^{\circ}59'33.941''$ BT. Lapangan JE memiliki luas $53,35 \text{ km}^2$. Lapangan ini berada pada sub cekungan Cipunegara yang dikontrol oleh sesar normal berarah Barat Daya – Timur Laut akibat periode deformasi ekstensi. Objek penelitian ini adalah interval formasi Talang Akar dengan fokus penelitian pada lapisan reservoir zona Z-28. Penelitian ini bertujuan untuk memahami kondisi geologi lapangan penelitian, menentukan karakteristik reservoir seperti fasies pengendapan, distribusi dan properti reservoir, serta prospek hidrokarbon pada reservoir Z-28. Data yang digunakan terdiri dari data *wireline log*, data petrofisik, deskripsi dan hasil analisis *core* dan *cutting* serta seismik 3D. Metode yang digunakan adalah analisis *wireline log*, analisis *core* dan *cutting*, analisis seismik dan perhitungan cadangan. Reservoir Z-28 Formasi Talang Akar pada Lapangan JE diendapkan pada lingkungan delta yaitu *distributary channel* dan *distributary mouth bar* dengan arah pengendapan Barat Daya – Timur Laut. Berdasarkan pemodelan properti reservoir daerah penelitian memiliki nilai rata – rata porositas efektif 13,86 %, saturasi air 0,76 dengan permeabilitas rata–rata 33,85 mD dan *net to gross* senilai 44,65 %. Estimasi total volumetrik hidrokarbon pada reservoir Z-28 lapangan JE sebesar $27,67 \times 10^6$ STB (*stock tank barrel*).

Kata kunci : Cekungan Jawa Barat Utara, Formasi Talang Akar, pemodelan reservoir, perhitungan cadangan.

***GEOLOGICAL STUDIES AND HYDROCARBON RESERVE CALCULATION
WITH RESERVOIR MODELING ON Z-28 ZONE, TALANG AKAR
FORMATION, "JE" FIELD, NORTH WEST JAVA BASIN***

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ABSTRACT

JE Field administratively is located around Sukra village, Sukra District, Indramayu Regency, West Java Province with coordinates of 6°15'7,071" South Latitude - 6°20'21,129" South Latitude and 107°54'10,663" East Longitude - 107°59'33,941" East Longitude. The JE field has an area of 53.35 km². This field is in the Cipunegara sub basin which is controlled by a normal fault with Southwest - Northeast trend as result of extension deformation. The object of this research is the interval of the Talang Akar formation with study focus at the reservoir layer Z-28. The main purpose of this study are to know geological condition of JE Field to determine reservoir characteristic such as depositional facies, reservoir properties and distribution, and hydrocarbon prospect of reservoir layer Z-28. The data used in this study consists of wireline log data, petrophysical data, descriptions and results of core and cutting analysis and 3D seismic. Several methods that have been used are wireline analysis, core and cutting analysis, seismic analysis and hydrocarbon volumetric estimation. Z-28 resevoir Talang Akar Formation was deposited in delta which is distributary channel and distributary mouth bar with Southwest - Northeast sedimentation trend. Based on reservoir property modelling the research interval has average reservoir porosity is about 13,86 %, water saturation 0,76 with average permeability 33,85 mD and net to gross is about 44,65 %. The total hydrocarbon volumetric estimation on Z-28 resevoir of JE Field is 27,67 x 10⁶ STB (*stock tank barrel*).

Keywords: North West Java Basin, Talang Akar Formation, reservoir modeling, reserve calculation.